Editorial

Improving Quality in the Dissemination of Nursing Science

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Donaldson and Crowley (1978), in their seminal discussion of the discipline of nursing, exhorted nursing to ensure we possess three attributes as a discipline. Every discipline that gets its mandate from society, must have a unique body of knowledge, and must be autonomous.

If society does not see a need for nursing, then nursing will not exist. Many surveys in the U.S. (Gallup, 2010) have shown nurses are currently well regarded as a profession and are trusted for honesty and ethics. However, to continue to have a societal mandate, nursing must provide important services to patients as they seek to improve their own health or the health of family members or while they strive to attain a peaceful death. These services must be based on nursing science.

For too long, we have practiced nursing based either on tradition, what authority figures recommend, or on our own experience, rather than practice based on science. For example, many of the interventions we perform for women who are in labor are based on tradition and not on science, and these traditions have been slow to change. (Gennaro, Mayberry, Kafulafula, 2007). What is more distressing, there are many interventions we should be performing and are not. In such case, although their benefits have been supported by excellent research (such as 1:1 nursing care in labor, or delayed pushing during second stage labor, or putting stocking caps on infants in incubators), these interventions have yet to be incorporated fully into nursing practice (Gennaro, 2010).

There is a long gap between the time research is produced and before it is established in practice. Some studies in the United States show 30-45 per cent of patients are not getting the best treatment science has to offer and 20-25 per cent are actually receiving care that could hurt them. (McGlynn, 2003). Therefore, it is imperative that nursing science be widely disseminated in a timely fashion.

The third characteristic of a discipline is that it has autonomy. When it is not clear what nurses are able to do on their own, it becomes difficult for them to have an inde-

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pendent body of knowledge that guides nursing practice. Therefore, it is very important nurses have organizations that develop nursing standards and help to legislate independent nursing practice.

Nursing is, by its very nature, interdisciplinary. So, although we need to understand how and when nurses can act independently and to define the scope of nursing practice, nursing care is provided in conjunction with many other disciplines contributing to patient outcomes. This is important, because it impacts the science that needs to be produced to support our care. Much of the work that defines evidence based medicine has the advantage of often providing information for a solo practitioner working with a single patient. For example, to decide how best to treat a patient's diabetes, the evidence does not need to take into account systems concerns or the practice of other health care providers. Rather, evidence-based medicine can evaluate what works best in independent practice. Evidence-based nursing is a little more complex, because nursing often occurs within a system and interacts with much more than just the patient (the family, community, etc.). So, nurses must disseminate research that is interdisciplinary and must do so in nursing and interdisciplinary journals that are available to all health practitioners.

Nurse researchers who successfully conduct significant and innovative studies are interested in ensuring their research is disseminated in the highest quality journals. Nurse editors, who generally serve for three to five years in the position of editor before they feel they developed their expertise adequately, are very interested in producing the highest quality journals (Freda, and Kearney, 2005). Nurse reviewers, who report spending an average of five hours on each review and who do this as a voluntary contribution to the discipline, also are interested in reviewing for the highest quality journals (Kearney, Baggs, Broome, Doughery, Freda, 2008).

Quality, however, is not always easily defined. One common measure of quality is the impact factor that measures the number of times an article is cited by other authors and develops a ratio that compares citations with the number of citable articles published in a given period of time. There are ways to artificially manipulate the impact factor, such as demanding authors cite works from a particular journal. Such tactics are not entirely ethical.

Another reason why impact factors might not adequately measure quality is that all citations are not captured in the process of developing the impact factor. There is systematic bias as to which journals are included in the citation process and which are not. Although the number of nursing journals Thompson Reuters includes in its examination of impact factors has increased in the last few years, nursing remains underrepresented. (Gennaro, 2010). Similarly, a particular journal may have many citations to all its articles that are all counted in the numerator of the impact factor, but only a few articles meet the

criteria to be classified as citable and are counted in the denominator, thereby, artificially raising the journal's impact factor (Jacso, 2001)

Certain journals have been shown to have a slow but steady accrual of citations over more than the preceding two years, which is typical of the slow rate of change in clinical practice. These journals might have a consistently lower impact factor when compared to journals with a large but brief citation accrual (Vanclay, 2009). In nursing, a one-year picture might not truly capture the quality of work being produced, and a five-year look at impact might be a better measure of quality, as the Article Influence Score might be. The Article Influence Score and the Five-Year Impact Factor are both rankings produced by Thompson Reuters; they take time into account when defining the quality of a given piece of work (Thomson Reuters, 2010).

Systems that categorize the number of times a work is cited by other researchers certainly measure quality in terms of contribution to science, but do not provide information about the impact of a journal on practice. A better measure of quality for practicing nurses is to examine downloads. Publishers are able to provide information about how many times a particular article has been downloaded. Just because a nurse has downloaded a manuscript does not mean she has used the knowledge found in the article to change practice. However, downloads do provide information as to what nurses who are not writing for publication find to be of interest. Unfortunately, there is no easy way for authors, editors, or reviewers to compare the number of downloads between journals to ascertain which journals are producing clinically relevant information.

The length of time journals are indexed in major databases is another mark of quality. Journals that are consistently indexed ensure researchers and practitioners have the ability to easily access knowledge they need. Examining some of the more important databases is a good way to understand the quality of nursing science in a particular region of the world (Mendoza-Para, Paravic-Kijn, Munoz-Munoz,, Barriga, Jimenz-Contreras (2009).

Production values of a particular journal also are tied to quality. Because we wish to ensure science is translated into practice in a timely fashion, it is important to ensure studies are disseminated within an appropriate time frame. Peer review takes time, but making sure all authors are able to hear decisions on their manuscripts within three months is quite possible, given the computerized manuscript management systems that are now in place for journals. These systems send out automated reminders to reviewers concerning reviews that are due, collate reviews for editors, and help editors to track tardy reviews and send out blinded copies of decisions, including a full set of reviews to authors and to reviewers.

Journals with good production values, savvy editors, and committed reviewers are aided in disseminating significant research by also having an involved editorial board to help set direction in terms of the kinds of manuscripts a journal is most interested in publishing. Editorial boards in different journals have different functions, but an editorial board generally serves to provide some support and direction to the editor and helps to solicit excellent research for dissemination, as well as reviewers who are committed to providing timely, helpful, and constructive reviews.

Quality journals also provide marketing services to make sure their most important articles are read by potential audiences. Attending professional conferences and sharing recent copies of the journal is one common activity provided by publishers. Other helpful activities are sending email alerts to potential readers about articles that might be of specific interest based on subject matter. Editors can track which articles are most cited and most downloaded and can ensure other articles on these topics are sent to the authors of those articles, so important science is disseminated to interested parties as quickly as possible.

Finally, quality journals have a staff to ensure manuscripts that are submitted are copy edited and proofed carefully so references are correct, the language is clear, and mistakes are minimized. No matter how careful and diligent an editor is, it is quite impossible for the same person to copy edit and proof. Familiarity with manuscripts makes it difficult to see mistakes. So, having staff to copy edit and proof is an important mark of quality.

When an author is deciding to which journal he or she would like to submit, probably the most important factors that help to determine this selection are the mission of the journal and the databases in which a journal is indexed. Clearly, the length of time it takes to hear from reviewers and the length of time prior to publication also concern authors. Before submitting a manuscript, an author should ensure the journal is published on a regular basis with an adequate amount of copy. This is the most basic measure of quality. No author wants to send a manuscript to a journal that does not publish regularly and does not have a sufficient number of manuscripts. Such journals are not widely read and do not meet the criteria to be included in the major indexes.

Questions about quality and barriers to disseminating the science needed for nursing practice are always rising. The current model of double-blinded peer review journals is not the only model for research dissemination and might not be the model of the future. Some prestigious scientific journals, such as Nature , have experimented with open online reviews in which readers are encouraged to comment on submitted manuscripts prior to acceptance for publication, if the authors agree to this process (Greaves, 2006).

Open-access journals are currently another model of knowledge dissemination, although there are many questions as to which model produces the best quality dissemination. Open-access journals are often quicker in terms of disseminating information, but might not always have the same level of quality as journals with double-blind reviews. One interesting model in open-access journals is that of BioMed Central (BMC), which publishes 220 journals on science, technology, and medicine. Each of their journals has a unique, detailed peer-review policy, ranging from traditional anonymous peer review to signed reviews and databases of reviewers' reports, authors' responses and revisions, all linked to the published article (such as BMC Nursing). Since BMC journals are online, article publication can be rapid and efficient subsequent to peer-review and editor approval. Many of these journals are tracked for the impact factor, and allow authors to retain certain intellectual property rights to re-use and redistribute their work (BioMed Central, 2011).

No matter what the model of dissemination, there are several new tools editors are currently using to help ensure quality in research dissemination. Questions about plagia-

rism and self-plagiarism have long plagued the publishing world. Ensuring the work being disseminated is the intellectual property of the author and has not been disseminated elsewhere is important. Time is a resource, as are page limits. So, no matter what the method of dissemination, abusing this resource by publishing the same information verbatim in more than one venue (self-plagiarism) is not ethical. Certainly, stealing the work of authors is even more abhorrent. Computerized programs are a new tool to ensure the work being disseminated is not plagiarized. "CrossCheck" is one example. It compares submitted manuscripts to other published work or works on the Internet. With the use of authenticating software, editors are able to ensure originality, which is another indicator of quality.

As editors, reviewers, and researchers all work to improve the quality of the research that is being disseminated, there are a few important things to remember. We are increasingly a global world. Consequently, examining the research from different parts of the world before planning a research study is important. Knowing the global state of the science is a vital first step in deciding what research needs to be done and will be important for the lives of as many people as possible. After all, research is hard to do, and all of us want to make the most meaningful contribution possible. In addition to understanding the state of the science from a global perspective, it is important to realize language is a barrier. Although English is currently the language of science, not all of us can write in English as well as we speak or understand the language. However, there are many professionals to help edit manuscripts from authors who have English as a second language. Researchers need to be able to produce significant research. Reviewers need to be able to identify significant research, and editors need to be able to help that research be communicated as effectively as possible. Nurse editors will continue to struggle with issues concerning language and how best to ensure information is disseminated in more than one language and in a way that ensures translation is appropriate. However, although the challenges to disseminating nursing research globally are easily identified, it is unthinkable that we, as a discipline, will not meet these challenges. Today, more than ever before, the society to whom we answer is a global society and it gives us our mandate to function autonomously and to improve our body of knowledge, so the discipline of nursing can continue to improve the health of the world's people.

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